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**A Review of Literature on Sustainability in Indian Micro, Small and Medium
Enterprises: Insights and Managerial Implications**

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A Review of Literature on Sustainability in Indian Micro, Small and Medium Enterprises: Insights and Managerial Implications

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Abstract

Sustainability or sustainable development has become an important issue in the context of climate change and growing social inequity. While large companies are held responsible for their environmental and social obligations, the collective responsibility of small companies, called Micro, Small and Medium Enterprises or MSMEs, cannot be ignored. While MSMEs are an important part of a country's economy generating employment and contributing to the national income, they also have a significant carbon footprint and being located mostly in rural and remote areas, have important social obligations to fulfil. This paper presents a review of literature on sustainability in Indian MSMEs. Based on the literature review, the paper identifies the barriers to and drivers of the implementation of sustainable practices in MSMEs. Survey results on the effects of implementing sustainable practices on firms' economic, environmental and social performance are also reviewed. Based on the summary of the literature review, the paper draws important managerial insights and practical implications for the owners/managers of MSMEs, governments/regulatory bodies and industry associations/chambers of commerce in order to ease and facilitate the implementation of sustainable practices. The paper concludes with some directions for future research on sustainability in MSMEs.

Keywords: Literature review; Sustainability; India; MSME; Insights; Managerial implications

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Introduction

Sustainability or sustainable development is an important topic of today in view of growing environmental pollution and social inequity. Sustainability has three dimensions – economic, environmental and social. This is also known as the triple bottom line or TBL or 3BL. Also known as ‘People, Planet and Profit’, it emphasizes that a firm should not only focus on the economic profit for viability, but also behave, and act, responsibly towards the environment and society. It must redesign its products and processes in order to reduce material, water and energy consumption, Greenhouse Gas (GHG) emission and waste/effluent generation. New products should be designed with biodegradable and recyclable materials such that when they are disposed of, they will not contaminate the soil, water and air, and if they are still functional at the end-of-use, instead of sending them to landfills, they must be recycled and reused, thus extending their lifecycles. Socially, a firm has a two-way responsibility, towards its employees and the community/society external to the firm. It must create a safe and healthy working condition, and ensure indiscrimination, inclusivity, fairness and dignity at the workplace, to build a satisfied, motivated and committed workforce, who would willingly and proactively help further the firm’s environmental and social initiatives. For community-related activities, the firm should consider generating direct/indirect local employment opportunities, building infrastructure such as roads, schools, dispensaries, and drinking water, sewage and sanitation facilities, and taking up education, training, skill development and various other social projects for the local community. It is imperative for a today’s firm to secure local buy-in and the continued support and cooperation of the external community and society for its survival, growth and competitiveness.

So far, research on sustainability has focused more on large companies than on Micro, Small and Medium Enterprises (MSME) since it was believed that large companies had the capacity to cause more environmental pollution and had a greater responsibility to serve the local community/society in comparison to MSMEs (Torugsa et al., 2012; Courrent et al., 2018; Eweje, 2020). Also, the attention of extant research has been given more to the environmental dimension than to the social dimension of sustainability (Lawrence et al., 2006), probably because the environmental dimension gained prominence as a consequence of currently raging global warming and climate change issues, and due to the fact that environmental practices and performance are more objective and easily measurable than social practices and performance that are subjective in nature and perception-based. However, the common perception is changing, and of late research on sustainability has been focusing on MSMEs and the social

dimension, besides the environmental dimension, of sustainability. MSMEs form the backbone of a country's economy. More than 90% of businesses for most of the countries belong to MSMEs. They contribute up to 50% of the Gross Domestic Product (GDP) and employ 50-70% of the working population of a country (Hussey and Eagan, 2007; Viesi et al., 2017; Witjes et al., 2017; Das et al., 2020b; Sahu et al., 2021; Siegel et al., 2022). Although the individual contributions of MSMEs to environmental pollution are insignificant, their collective contribution is significant (Eweje, 2020; Kariyapperuma and Collins, 2021), which cannot be ignored anymore. Research shows that collectively MSMEs are responsible for more than 60% of GHG emissions and more than 70% of industrial/commercial waste discharge (Simpson et al., 2004; Johnson and Schaltegger, 2016; Aghelie, 2017; Ashton et al., 2017; Chen et al., 2017; Johnson, 2017; Witjes et al., 2017; Caldera et al., 2018). Also, most of the MSMEs are located in villages and small towns, and embedded in their local communities. Therefore, compared to large companies, MSMEs are in a better position to serve the economically and socially weaker sections of the society through employment generation, community welfare, and infrastructure/social development projects (Lawrence et al., 2006; Williams and Schaefer, 2013; Rojas and Lorenzo, 2021).

The major barriers faced by MSMEs to the implementation of sustainable practices are the lack of awareness, adequate government support, regulations and resources. Surveys have shown that MSMEs are less aware than large companies of sustainability issues and the environmental and social implications of their operations (Gadenne et al., 2009; Fleiter et al., 2012; Johnson and Schaltegger, 2016; Boakye et al., 2020). They cite the lack of adequate government support in terms of economic incentives such as capital subsidies, soft loans, credit guarantees and tax exemptions, and assistance in terms of awareness generation and access to new technologies and markets (Lee and Klassen, 2008). Environmental regulations are poorly developed in many countries, especially for MSMEs in developing countries (Lee and Klassen, 2008; Nulkar, 2014). Also, the current government policies and regulations are relevant for large companies. MSMEs being smaller than large companies in size and scale need simple, flexible and cost-effective rules and regulations tailor-made for their operations (Johnson and Schaltegger, 2016). Moreover, MSMEs lack adequate financial, technical and human resources to implement sustainable practices (Lee and Klassen, 2008; Gadenne et al., 2009; Fleiter et al., 2012; Nair and Sodhi, 2012; Torugsa et al., 2012; Babu et al., 2016; Ashton et al., 2017; Courrent et al., 2018; Bakos et al., 2020). They are so narrowly focused on their day-to-day activities for survivability that they overlook the environmental and social implications of their

operations. However, compared to large companies, MSMEs have a flexible structure and informal organizational culture, which make it less bureaucratic for them than for large companies to implement sustainable practices (Torugsa et al., 2012, 2013; Das et al., 2020a). Also, if the owners/managers of MSMEs are aware of sustainability issues, and have ethical orientation and leadership abilities, it is easier for them to create a motivated and committed workforce to further the implementation of sustainable practices than for the management of large companies, which is more formal and professional in nature (Cordano et al., 2010; Roxas and Coetzer, 2012; Torugsa et al., 2012, 2013; Eweje, 2020). Implementation of sustainable practices does bring in short- and long-term business benefits to MSMEs. On the one hand, MSMEs may reduce material and energy consumption, and waste/effluent generation, which not only reduce environmental pollution, but also result in immediate cost savings. On the other hand, MSMEs' continued effort in implementing sustainable practices is expected to bring in medium-to-long-term gains in terms of business growth, innovation capability, access to new markets, stakeholder satisfaction, and improved brand image and competitiveness.

This paper presents a review of the current literature on sustainability in Indian MSMEs to highlight the challenges faced by MSMEs in implementing sustainable practices and identify the initiatives required from key stakeholders to ease the process of implementation. The paper also summarizes the literature findings on the effect of implementing sustainable practices on firms' environmental, social, operational and business performance, and draws practical and managerial implications. The organization of the paper is as follows. In the next two sections, a brief description of Indian MSMEs, their contribution to the economy and role towards environmental and social sustainability are discussed. The subsequent section presents the literature review, and the section after that summarizes the literature review and draws practical implications for the owners/managers of MSMEs, governments/regulatory authorities, and industry associations/chambers of commerce. Concluding remarks are presented in the final section.

It is to be noted that throughout the paper, the abbreviations 'MSME' and 'SME' have been interchangeably used since the reviewed literature has referred to small companies as both MSME and Small and Medium Enterprises (SME).

Indian MSMEs and their contribution to the economy

The definition of MSMEs, given by the Ministry of Micro, Small and Medium Enterprises (MSME) of the Government of India (GoI), which is based on the investment in plant and

machinery/equipment and annual turnover, is as follows. If the investment in plant and machinery/equipment is not more than Rs. 1 crore and the annual turnover is not more than Rs. 5 crore, then the enterprise is categorized as a micro enterprise. For small enterprises, the corresponding figures are Rs. 10 crore and Rs. 50 crore, and for medium enterprises, the corresponding figures are Rs. 50 crore and Rs. 250 crore².

There are about 634 lakh MSMEs in India of which more than 99% is accounted for by micro enterprises. These MSMEs employ 11.1 crore people of which about 97% is employed in the micro sector³. The MSME sector contributes about 30% to India's GDP, the contributions of the manufacturing and service segments being about 6% and 24%, respectively⁴. The sector also accounts for 45% of the country's total industrial production and 49.5% of total exports^{5,6}.

Role of Indian MSMEs towards environmental and social sustainability

According to the latest data available on the World Bank website⁷, world GHG emissions in 2019 were of the order of 46.3 billion tonnes CO₂-equivalent to which the contributions of China, the US, European Union and India, the largest emitters of GHG, were about 12.7, 6, 3.4 and 3.4 billion tonnes CO₂-equivalent, respectively. Considering India's commitment to various climate agreements, such as the Paris Climate Treaty (2016), there is an urgent need to devise policies and procedures for reducing the emission of GHG. As one of the major sources of GHG emissions is industrial production, and India's MSMEs collectively contribute a significant amount to the country's total industrial output and therefore are responsible for a large quantity of GHG emissions, immediate attention should be given to MSMEs, besides large companies, to help them reduce the level of their GHG emissions.

Indian MSMEs contribute significantly to the social development of the country by encouraging entrepreneurship and generating employment opportunities at a low capital cost. MSMEs generally act as ancillary units of large companies and play a role in the inclusive development of the country by serving the demographically and geographically weaker sections of the society. Out of 634 lakh MSMEs, about 325 lakh or 51% are located in rural areas. About 96% of these MSMEs are proprietary concerns, approximately 80% of which are

² <https://msme.gov.in/know-about-msme>

³ <https://msme.gov.in/sites/default/files/MSMEENGLISHANNUALREPORT2021-22.pdf>

⁴ <https://cii.in/Sectors.aspx?enc=prvePUj2bdMtgTmvPwwisYH+5EnGjyGXO9hLECvTuNuXK6QP3tp4gPGuPr/xpT2f>

⁵ <https://www.smechamberofindia.com/about-msme-in-india.php>

⁶ <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1744032>

⁷ <https://data.worldbank.org/indicator/EN.ATM.GHGT.KT.CE>

owned by male entrepreneurs and the rest by female entrepreneurs, although the distribution is slightly tilted in favour of female entrepreneurs in rural areas. About 66% of MSMEs are owned by socially backward groups, the share rising to about 74% in rural areas. Out of 11.1 crore people employed in the MSME sector, about 5 crore or 45% are employed in rural areas. Male employees constitute 76% of the workforce while female employees account for the rest, although the share of female employees is slightly higher in rural areas than in urban areas⁸. It is apparent that MSMEs play a significant role in the economic and social development of the country by serving the geographically and socially disadvantaged sections of the society, and therefore, their efforts should be encouraged, and their initiatives facilitated, to ensure an inclusive economic growth.

A review of literature on sustainability in Indian MSMEs

There has been limited research on sustainability in Indian MSMEs till date. Of course, of late, the number of publications has increased. A chronological review of literature, 2011 onwards, on Indian MSMEs follows.

Sangwan (2011) identifies the quantitative and qualitative benefits of Green Manufacturing (GM) through a literature review, and validates them through a survey of Indian SMEs. The author defines GM at the intersection of manufacturing and design practices, and environmental issues, concerns and practices, i.e. the greater the overlap between these areas, the greater the extent to which manufacturing and design practices recognize and embody environmental issues, concerns and practices. The author notes from the literature that the benefits of GM may range from cost reduction, improvement in productivity and product quality, safer and cleaner facilities, reduced environmental and health risks, better working conditions, and improved employee morale to customer loyalty, opening of new markets, higher market share, innovativeness, competitiveness, and improved corporate image and relations with stakeholders. The author also highlights that one of the far-reaching implications of GM is the lifecycle approach (LCA) to production, i.e. to take into account the environmental impacts of the entire lifecycle of a product starting from design, sourcing and manufacturing to storage, distribution, use, collection, inspection and recovery/disposal, and if properly implemented, LCA may result in reduced waste/effluent treatment/disposal costs, energy and cost savings from recycling and reuse activities, reduced penalties and liabilities, and lower regulatory compliance costs. In another study, Mittal et al. (2012) identify the drivers and

⁸ <https://msme.gov.in/sites/default/files/MSMEENGLISHANNUALREPORT2021-22.pdf>

barriers for the implementation of Environmentally Conscious Manufacturing (ECM), another name for GM, and validate them by conducting a case study in Germany and India for comparison. The authors identify current and future regulations for compliance, financial incentives such as attractive loans, grants and tax exemptions for capital investments, public pressure in terms of the pressure exerted by various stakeholders such as local communities, NGOs, consumer groups, media and political parties, peer pressure exerted by trade and business associations, cost savings due to reduced material and energy consumption, increased competitiveness due to improved efficiency, customer demand for environmentally friendly products, supply chain pressure exerted by suppliers and distributors, and the commitment and leadership of corporate managers as the major drivers for an effective implementation of ECM.

Nair and Sodhi (2012) highlight Corporate Social Responsibility (CSR) practices by Indian SMEs, and note that although CSR practices are skewed towards large companies, many SMEs being located in small towns, villages and remote areas are embedded in their local communities and eminently suited to pursue CSR practices. The authors present the findings of five case studies on the best CSR practices by Indian SMEs. The authors note that many SMEs do not see the immediate relevance of environmental and social issues to their businesses, and are focused on the short-term survivability of their enterprises. However, CSR does pay off in the long run, and has proven to have brought in business advantages in terms of staff recruitment, development, commitment, morale, motivation and retention, customer loyalty, new product development, access to new markets, energy savings, innovation, competitiveness, visibility, image and reputation that would not have been achievable otherwise. The authors mention that the nature and level of CSR implementation in SMES are influenced by factors such as sector, size, age, history, whether family- or non-family-owned/managed, position in the value chain and nature of client relationships. The ethical orientation and moral responsibility of owners/managers are cited by the authors as the main drivers of CSR implementation in SMEs. On the other hand, the lack of resources is cited by SMEs as the main barrier to CSR adoption. The five case studies presented by the authors mention the following CSR practices: abolition of child labour, child education, health check-up, promotion of women entrepreneurship, widow stipend programme, orphan girl marriage assistance unit, raising funds for social causes through people participation, and promoting sustainable livelihoods while protecting the environment in rural and remote areas. The authors note that increased supply chain pressures, i.e. buyers'/exporters' stringent environmental and social requirements enforced on their suppliers would encourage more and more SMEs to adopt

CSR practices. SME clusters are more effective than SMEs in silos because clusters provide the advantages of economies of scale and tax exemptions, among others. Moreover, SMEs in clusters can collaborate and communicate with each other, and thus learn from and share good practices with each other promoting a cost-effective implementation of CSR among them. The authors also highlight the role of chambers of commerce and industry associations that can facilitate the implementation of CSR practices by generating awareness and arranging for training programmes for SMEs. The SMEs in the case studies lament that they receive minimum support from the local governments, banks and financial institutions for their CSR initiatives. Had there been intermediaries and Public-Private Partnerships (PPP) between SMEs and their local governments, and had SMEs been extended concessionary loans by banks and financial institutions to support their CSR initiatives, more and more SMEs would have been encouraged to voluntarily adopt CSR practices, the authors note.

Chhikara and Kodan (2013) note that since many SMEs are located in rural areas, they play an important role in strengthening the rural economy, generating rural employment opportunities at a low per capita capital investment, and checking the migration of rural population to urban areas in search of jobs. The major challenges faced by SMEs are identified as the lack of access to finance, technology and market, lack of government support, low investment in R&D, insufficient capacity, inadequate training and poor infrastructure. The authors recommend that both the central and state governments should ensure the availability of affordable credit through priority sector lending for financial inclusion, provide fiscal incentives, help access technology and markets, organize training programmes and facilitate skill development, remove infrastructural bottlenecks, and formulate a conducive policy/regulatory framework to help SMEs become self-reliant and contribute to economic development.

Nulkar (2014) attempts to answer the question whether environmental sustainability matters to SMEs, based on a survey of engineering SMEs. The author notes that the lack of awareness and knowledge, resource constraints, additional investments and underdeveloped infrastructure are some of major factors limiting the adoption of environmental practices in Indian SMEs. Many SMEs are unaware of the business benefits of environmental practices such as energy savings, and if they feel that the benefits are not realizable in the short run, they would immediately shelve the idea of voluntary adoption of environmental practices. As far as compliance with government regulations is concerned, SMEs see it as an additional cost, and since it may be difficult to enforce regulations uniformly across the country, the SMEs that comply with regulations are at a cost disadvantage in comparison to the SMEs that escape

regulations. The author also notes that most business buyers are focused more on costs than on environmental performance of their SME suppliers, and even if they enforce environmental requirements on their suppliers, they would not be willing to pay extra for their suppliers' environmental efforts. There is no competitive pressure either for the respondent SMEs as most of their competitors do not practise environmental sustainability. The author finds that in the product lifecycle, most of the greening efforts are concentrated in the manufacturing stage, rather than in planning, design, sourcing, and sales and distribution. Since greening efforts such as reducing material, energy and water consumption, and elimination of wastes, emissions and effluents are easily visible and measurable, regulations are focused more on the manufacturing stage than on the other stages of the product lifecycle. Moreover, since these greening efforts bring in immediate business benefits in terms of cost-competitiveness, SMEs treat them as the low-hanging fruits of environmental performance. The author suggests that if large buyers strictly enforce environmental performance on their suppliers, this can push SMEs to improve their performance in stages other than manufacturing. Similarly, regulations might shift the focus from an end-of-pipe approach, i.e. pollution control to pollution prevention. SMEs lack awareness, knowledge and resources. Therefore, the government, chambers of commerce and industry bodies should arrange for training and provide financial and technical assistance to SMEs to help them achieve environmental sustainability, the author recommends.

Singh et al. (2015) identify the drivers for implementing environmental management practices through a survey of both large companies and SMEs from the sectors of manufacturing, chemical, agriculture and services. The major drivers that have been identified include firms' image, regulatory compliance, competitiveness and prevention of environmental incidents. However, innovations in terms of developing new technology and products and cost savings have been found to be insignificant in motivating firms to employ environmental practices. Although the authors note from the literature that SMEs are more motivated than large companies to proactively adopt environmental practices, results of their study indicate that the larger the firm, the more comprehensive is the implementation of environmental practices. This finding corroborates the general view that since large companies have access to more resources, they are better equipped than SMEs in terms of more comprehensively adopting environmental practices. The authors also find that the manufacturing, chemical and agricultural sectors more comprehensively adopt environmental practices than the service sector confirming similar results reported in the literature that pollution-intensive firms adopt more comprehensive environmental practices compared to less pollution-intensive firms. The authors doubt whether

the adoption of environmental practices actually translates into improved environmental performance in developing countries like India and whether firms in developing countries adopt environmental practices more symbolically than with an intention to improve environmental performance, and call for more research to investigate the effect of implementation of environmental practices.

Thanki et al. (2016) investigate the effect of implementation of lean-green practices on the performance and competitiveness of SMEs using the Analytical Hierarchy Process (AHP) approach. Prior research indicates a positive impact of integrated lean-green practices on a firm's performance and competitiveness. Literature suggests when lean, green and social practices are independently implemented, there are positive impacts on a firm's triple bottom line performance; however, an integrated implementation of lean, green and social practices would result in an optimal triple bottom line performance. Literature has also shown that the implementation of green manufacturing practices in SMEs contributes to improved environmental performance through waste minimization and boosts firms' long-term profit, market share, image and competitiveness. Moreover, there are significant positive interactions between firms' environmental and social performance, and improved social performance is a component of improved environmental performance. The authors in their study find that Total Productive Maintenance (TPM) is the most important lean practice and ISO 14001 is the most significant green practice. Also, on-time delivery and a reduction in emissions are identified as the most critical criteria for leanness and greenness, respectively. Gandhi et al. (2018) also in their study on the ranking of drivers of integrated lean-green manufacturing for manufacturing SMEs note that the simultaneous implementation of lean and green practices can achieve excellent results. The authors find that top management commitment, technology upgradation, current and future legislation, and green brand image are the five most important drivers for the implementation of integrated lean-green practices in manufacturing SMEs. The study, which employs the TOPSIS method, reveals that strong leadership of SME owners/managers as part of top management commitment outranks all other drivers as it ensures effective skill development and knowledge enhancement among the employees of a firm. Organizational culture and employee empowerment are also important drivers because they help in establishing a healthy working environment by allowing employees to participate in the decision-making process. On the other hand, public pressure from local communities, local administration, NGOs and the media has been ranked low as a driver. This may be because in emerging countries like India, there is a lack of awareness and understanding about the

importance of green products and processes, the authors note. Thanki and Thakkar (2018) identify government support and organizational capabilities as the most important Key Success Factors (KSF) for the successful implementation of lean-green practices in SMEs. Government support in terms of financial assistance encourages SMEs to implement lean-green practices, and ensures top-level leadership and commitment that lead to employee training, motivation, empowerment and involvement in the decision-making process. Organizational capabilities, on the other hand, help in managing available resources, improving internal processes and achieving competitiveness by satisfying customers' requirements.

Malesios et al. (2018) study the relationships between social, environmental and operational practices and performance, and financial performance for British, French and Indian SMEs. Turnover as a financial performance measure has been found to be positively associated with standardized business processes, health and safety practices, and long-term relationships with customers. On the other hand, waste reduction and health and safety performance have been found to negatively affect turnover. For business growth, the other financial performance measure considered by the authors, Customer Relationship Management (CRM) practices, lean practices, and health and safety practices have been found to be positive predictors. Similar to turnover, for business growth also, the corresponding performances turn out to be less important factors. Further, French SMEs have been found to significantly differ from British and Indian SMEs in terms of business growth. Shashi et al. (2018) study the interlinkages among sustainability orientation, supply chain integration, sustainable procurement, sustainable design, environmental performance and cost performance for SMEs. Results indicate that sustainability orientation positively affects both sustainable procurement and sustainable design. External integration positively affects sustainable procurement and internal integration positively affects sustainable design. Sustainable procurement positively affects environmental performance, but not cost performance while sustainable design positively affects both environmental and cost performance. The authors claim that the practical and managerial implications of their study will help SMEs achieve better sustainability performance and provide valuable insights to the government and regulatory bodies for effective policy formulation.

Shibin et al. (2018) examine the link between frugal innovation and sustainable supply chains in SMEs. The authors argue that there is a synergy between these two aspects from the point of view of institutional barriers and resource constraints; however, the same has not been explored in detail especially for emerging economies like India. The results of their study

indicate that government funding, government policies and regulations, and process design capability are the most powerful driving factors for sustainability-oriented frugal innovations in supply chains. Further, international rules and regulations, and environmental awareness and knowledge are found to occupy the top of the framework because of their high dependency. According to the authors, the findings of their study confirm that frugal innovation and sustainable supply chains have a natural fit, they can co-exist and can be mutually beneficial since both of them try to be material- and energy-efficient, resource and cost constraints can be overcome by a frugal approach, and sustainability-oriented frugal innovations will help emerging economies and SMEs effectively address the economic, environmental and social issues. Khurana et al. (2019) identify the factors responsible for the integration of sustainability with innovation for manufacturing MSMEs based on a review of related literature, followed by an empirical study for validation. The authors find that government initiatives are the most critical parameter for sustainability-oriented innovation, followed by top management support and collaboration capability. The study is expected to help manufacturing MSMEs focus on the determinants for the integration of sustainability with innovation, and provide insights to the government for framing conducive policies and regulations.

Das et al. (2020a, 2020b) conduct a literature review to assess the current status of CSR practices, issues and challenges in SMEs, and suggest a model that can improve their sustainability practices, especially in the emerging economies of Asia. The literature review reveals that social and environmental issues are grossly neglected in SMEs, more specifically in the emerging countries, and highlights that factors such as collaborative mode of operation, government policy and facilitation and supporting organizational culture can positively influence SMEs' sustainability performance, thereby improving their financial performance. Based on the literature review, the authors frame research questions and develop a conceptual model, which is tested on a small sample from the leather and chemical industries in a particular geography of India. The authors mention the sample size and the concentration of sample SMEs as the primary limitations of their study, and propose that a larger empirical study with a higher sample size and covering more industries and geographies needs to be conducted to validate the conceptual model, which would provide guidance to SMEs for improving their sustainability and business performance.

Sajan and Shalij (2021) take a multi-case study approach to investigate the effect of lean manufacturing practices on sustainability performance in manufacturing SMEs. Data for the study have been collected from primary and secondary sources, such as structured interviews,

company documents and websites, and by direct observations of the manufacturing processes of the case companies. The authors also develop an assessment tool, based on past research, to examine the relationship between lean manufacturing practices and sustainability performance. The results of the study indicate that the higher the level of implementation of lean principles and practices, the better the levels of economic, environmental and social sustainability performance, irrespective of firm size and type of product. The authors cite the number of case companies and their particular geographical location as the primary limitations of their study, and expect that a broad-based study with more case companies of different sizes, belonging to diverse sectors and spanning wider geographical areas would help generalize the relationship between lean practices and sustainability performance. Sahu et al. (2021) examine how a tool, Material Flow Cost Accounting (MFCA), can be implemented in a steel pipes and tubes manufacturing SME to improve its financial and environmental performance. The result of the study reveals that the implementation of MFCA leads to higher productivity, better energy efficiency, annual savings and improved environmental performance. The SME's performance has also been monitored for five years to assess the long-term impact of the implementation of MFCA, and it is observed that the same has resulted in an increase in the return on invested capital and a reduction in the material usage cost. Singh et al. (2021) develop a sustainability disclosure index for Bombay Stock Exchange (BSE)-listed manufacturing SMEs. The authors note that the content analysis of sample SMEs reveals a gap in sustainability reporting practices, especially in the environmental and social dimensions, that are limited to purely descriptive narrations with hardly any quantitative information. The authors recommend improving sustainability reporting practices in manufacturing SMEs through strong policies and regulations. Mondal et al. (2021) also examine to what extent national and international sustainability guidelines and disclosure practices are followed by BSE-listed SMEs. The annual reports of sample SMEs indicate that although sustainability issues are accorded the highest priority, they are still in their nascent stage and the overall level of disclosure of sustainability practices is moderate. The pilot study provides a glimpse of the voluntary reporting of sustainability practices by SMEs following national and international guidelines.

Sahoo (2022) investigates the effects of lean practices and organizational culture on the operational performance of manufacturing SMEs. The author finds that both lean practices and organizational culture have significant and direct effects on the operational performance; moreover, organizational culture mediates the relationship between lean practices and operational performance. The author expects that future research would investigate the effects

of lean practices and organizational culture on financial, environmental and social performance. Malik et al. (2022) discuss the barriers and enablers of the adoption of Circular Economy (CE) practices by SMEs in emerging markets such as India. The authors highlight the limited research on the adoption of CE practices in emerging markets, especially in SMEs. They mention the lack of an appropriate organizational culture, lack of capital, knowledge, skills and support, lack of government aid, high compliance costs, absence of a collaborative approach and a common platform for knowledge exchange and diffusion of information, reluctance of suppliers to engage in innovations, and lack of customer pressure as the main barriers to the adoption of CE practices by SMEs. The authors take a qualitative multi-case study approach by interviewing the owners/managers of sample SMEs, intermediaries and large companies, and develop a multi-level theoretical framework, grounded in the CE and change management literature, that presents the nature and extent of CE activities, barriers and enablers of CE adoption in SMEs of emerging markets. The case studies show that the adoption of CE principles is still in its infancy in Indian SMEs, and the owners/managers of SMEs have a critical role to play in terms of providing leadership, developing an appropriate organizational culture, acting as change agents, generating awareness towards the benefits of CE, garnering support from all stakeholders and involving local communities through their customs and traditions, which the authors categorize as routines, rituals and recitals, and can act as enablers of the adoption of CE practices by SMEs. Nudurupati et al. (2022) also note that the adoption of CE in Indian SMEs is still nascent despite the government forming policies and taking various initiatives. The authors note that the extant research reveals the benefits of adoption of CE in emerging markets. A multi-case study-based approach, involving interviews and observations and supplemented by secondary information, is taken to identify the influencing and inhibiting factors responsible for the adoption of CE in Indian manufacturing and process-based SMEs, employing the Resource-Based View (RBV) theoretical framework. Results show that the lack of financial resources, business process analysis, top management commitment, skills, expertise, technological know-how, customer pressure, digital transformation and multi-stakeholder cooperation within the supply chain inhibits CE adoption, while environmental regulations, government policies and initiatives, brand image, competitive advantage and positive market perception are the drivers. The study proposes a CE implementation guideline for SME owners/managers to achieve resource efficiency, cost savings, multi-stakeholder collaborations and sustainable outcomes across all CE fields of action.

Summary of the literature review and practical implications

In this section, we summarize the key findings of the literature on sustainability in Indian MSMEs and highlight their practical implications from the perspectives of the owners/managers of MSMEs, governments and industry associations/chambers of commerce. The practical implications are supplemented by the observations made by Mitra (2021) in a survey of Indian SMEs.

The literature review reveals that sustainability in Indian MSMEs is still in its infancy. Either there is a lack of awareness of sustainability or even if there is awareness, the level of implementation of sustainable practices is very low. Owners/managers of MSMEs are focused more on the short-term goal of survivability than on the long-term benefits of implementation of sustainable practices. To many of them, implementation of sustainable practices would incur additional costs without any commensurate business benefits in the short run. On the contrary, if these expenses are treated as investments, they are sure to bring in benefits for the business, environment and society in the long run, many researchers argue. The literature on Indian MSMEs identifies the barriers to and drivers of the implementation of sustainable practices. In fact, many of the barriers that have been identified to impede the implementation of sustainable practices, if adequately addressed, would act as drivers. For example, major barriers such as limited access of MSMEs to financial, technical and qualified human resources, difficulty to secure loans from banks and financial institutions, and lack of adequate financial, technical and advisory support from the government/industry bodies, can be addressed to a significant extent if the government/regulatory body provides adequate capital subsidies, and incentives in terms of easy credit facilities, soft loans and tax exemptions, mandates banks and financial institutions to ensure priority sector lending and micro financing, and formulates a policy/regulatory framework conducive to the growth of the MSME sector. Similarly, industry associations and chambers of commerce may organize training programmes to generate awareness of sustainability, and provide technical, advisory and consultative services to MSMEs to help them overcome some of the barriers and implement sustainable practices. Apart from government support and the role of industry associations/chambers of commerce, other important drivers of the implementation of sustainable practices have been identified as regulatory compliance, pressure from stakeholders such as suppliers, customers, employees, communities, NGOs and different public interest groups, owners'/managers' awareness, values, ethical orientation and leadership abilities, employee awareness, motivation, commitment and organizational culture, cost-efficiency due to reduced energy and material

usage, and opportunity to attract and retain talent, develop new environment-friendly products, target new segments of environmentally conscious customers, improve market share and growth, and build a clean image and competitive advantage.

There have been studies in the literature to explore the effect of adoption of sustainable practices on firms' sustainable and business performance. While some researchers doubt the relationship between sustainable practices and firm performance, others have found evidences of the positive effect of sustainable practices on firms' environmental, social, operational and economic performance. Sustainable environmental practices do improve firms' environmental performance by reducing emissions and minimizing wastes. Sustainable social practices, on the other hand, improve firms' social performance in terms of maintaining a safe and healthy working condition, ensuring indiscrimination, inclusivity, fairness and dignity at the workplace, improving employee involvement, satisfaction and motivation, attracting and retaining a skilled and committed workforce, and generating employment opportunities and engaging in social development projects in local communities. Sustainable environmental practices also improve firms' operational performance. For example, a reduction in material and energy usage would result in cost-efficiency, and an emphasis on environment-friendly product and process development would lead to improved productivity, product quality and firms' innovation capability. Sustainable environmental and social practices have also been observed to positively influence firms' economic and long-term strategic goals. The literature has reported positive effects of adoption of sustainable practices on firms' profit, market share, growth, new product development, access to new markets, customer satisfaction, brand image, reputation and competitive advantage. It is expected that more such observations and research findings would encourage more MSME owners/managers to adopt and implement sustainable environmental and social practices, to the benefits of the environment, society and economy.

As far as the implications for MSME owners/managers are concerned, they must realize that adoption of sustainable practices is not an option anymore. They have to implement sustainable practices either for regulatory compliance or of their own volition. They must understand that even though their individual contributions to environmental degradation may be low, the collective contribution of the MSME sector is huge, requiring individual MSMEs to focus on reducing their carbon footprints. Some of the SME respondents to the survey conducted by Mitra (2021) do highlight the pollution factor and emphasize that the environmental issues should be given due consideration. MSMEs should consider the expenses incurred for the implementation of sustainable practices as investments, rather than costs, which would

definitely bring in both short- and long-term benefits to them. For example, if MSMEs design products with fewer materials that are biodegradable and recyclable, and develop manufacturing processes with lower water and energy consumption and reduced waste/effluent generation, these low-hanging fruits would not only reduce their carbon footprints, but also bring in immediate business benefits in terms of cost savings. On the other hand, adoption of sustainable practices is expected to bring in long-term benefits such as growth in the market share, revenue and profit, development of competency and innovation capabilities, introduction of new products and access to new markets, customer and stakeholder satisfaction, brand image and competitive advantage. As one of the authors (Nulkar, 2014) notes, MSMEs' greening efforts are focused more on the manufacturing stage than on the other stages of the product lifecycle such as product and process design, sourcing of raw materials, and sales and distribution of finished products. The same has been found to be true for the SME respondents to the survey conducted by Mitra (2021), who have rated themselves low on supplier collaboration for sustainable procurement, and sustainable storage, transportation and office practices. For a holistic view of environmental sustainability, MSMEs must focus on the entire product lifecycle/supply chain, rather than on individual stages.

Sustainable practices are primarily driven by MSME owners'/managers' vision, values, ethical orientation, motivation, commitment and leadership abilities. Mitra (2021) finds a strong association between the ethical orientation and leadership abilities of SME owners/managers, environmental and social practices, environmental benefits and firms' financial and non-financial performance. Owners/managers of MSMEs must build an organizational culture conducive to the implementation of sustainable practices. Research (See e.g. Mitra, 2023) has shown a positive link between an organization's culture and its ability to implement sustainable practices. Since employees are at the forefront of all activities, owners/managers must start with developing a sustainable Human Resource Management (HRM) policy. They must ensure a safe and healthy working condition, employee welfare, dignity and fairness at the workplace, employee empowerment and involvement in the decision-making process. An effective HRM policy would create a satisfied, motivated and committed workforce, who would happily, and voluntarily, take forward firms' initiatives towards environmental and social sustainability (See e.g. Torugsa et al., 2013, Hu et al., 2015, Courrent et al., 2018, Chasse and Courrent, 2018 and Eweje, 2020). Moreover, a good people-centric work environment would help firms to attract and retain talent. Research (See e.g. Mitra, 2021) has shown that proper training and education of employees have a strong impact on the positive relationship among MSME

owners'/managers' ethical orientation and leadership abilities, and firms' environmental and social practices and performance. Therefore, it is imperative for MSMEs to invest in employee training and education for loyalty and retention. MSMEs should also serve their local communities in terms of employment generation and various social improvement/development projects because they need the support of local communities for existence and viability of their businesses. However, the survey conducted by Mitra (2021) has found that while the respondent SMEs have rated themselves high on environmental and employee-related social practices, their self-ratings for community-related social practices have been low, indicating that currently they are not focusing as much on services to local communities as on their other sustainability initiatives. Again, MSMEs are being short-sighted and considering the expenses incurred on community services as costs, rather than investments. They must realize that these expenses may not bring in immediate business benefits, but they would definitely ensure local buy-in, a feel-good factor within the local community, their continued cooperation and support, and, of course, firms' improved financials, image, reputation and competitiveness in the medium-to-long run. Therefore, there is an urgent need for MSME owners/managers to focus on community welfare and step up their services rendered to local communities.

As far as the government is concerned, it has a regulatory and facilitative role to play to ensure that MSMEs function in an economically, environmentally and socially sustainable manner. Since MSMEs provide employment to a large number of the working population and make significant contributions to the economy, it is imperative for the government to provide them with all possible support and assistance, especially under the current 'make in India' and 'zero-defect, zero-effect' policy aimed at manufacturing quality products in India with minimal environmental impacts (Babu et al., 2016). Since zero-defect \equiv zero-waste, improving product quality also reduces emissions and waste generation, and makes products environment-friendly (Porter and van der Linde, 1995; Corbett and Klassen, 2006). The government should develop a regulatory framework and ensure that all MSMEs, irrespective of their sectors or locations, must comply with government policies and regulations such that an honest MSME complying with regulations is not at a competitive disadvantage against a dishonest MSME escaping compliance, as noted by Nulkar (2014). Some respondents to the survey conducted by Mitra (2021) mention that government rules and regulations should be made simpler and should not be revised frequently for consistency and easy compliance. Strict regulations may also be imposed on large companies for sustainable sourcing, which would put an indirect pressure on

MSMEs to adopt sustainable practices since many of the suppliers of large companies happen to be MSMEs.

Besides regulations, the government should consider providing capital subsidies, soft loans, credit guarantees and tax exemptions to MSMEs for the economic viability of their businesses and to assist them in pursuing their environmental and social sustainability initiatives. A look at the Annual Report of the Ministry of MSME of GoI for 2021-22⁹ shows that the government does run various schemes for MSMEs aimed at financial and technical assistance, infrastructure and MSME cluster development, skill development, training and certification programmes on design, innovation, sustainability and energy efficiency, enhancing competitiveness and market assistance. However, the literature review reveals that either MSMEs are not well aware of the government schemes or the benefits of these schemes are not seamlessly reaching the intended beneficiaries. The SME respondents to the survey conducted by Mitra (2021) have given low ratings to items such as awareness generated and training programmes organized by the government, and technical support/facilitation provided by the government, which indicates that the government needs to do more in terms of organizing awareness/training/skill development programmes for MSMEs and extending technical support to them. Although the Annual Report for 2021-22 mentions about a cluster development programme for MSMEs, the programme needs to be strengthened in light of many MSMEs highlighting the lack of infrastructure as one of the barriers to the implementation of sustainable practices. The government should ensure that more and more MSMEs become part of these clusters because locating operations within clusters would not only enable MSMEs to share common infrastructure and services leading to cost savings, but also help them access information and knowledge resources.

Many of the MSMEs are located in rural areas and small towns, and embedded in their local communities. Many of them are entrepreneurs and generate local employment. A good number of them are owned by socially backward classes. Therefore, MSMEs play a significant role in the economic and social development of the demographically weaker sections of the society. The Annual Report for 2021-22 shows that the government has various schemes for MSMEs located in remote and hilly areas, and owned by backward classes, disabled persons and women entrepreneurs. These schemes need to be further strengthened to serve the geographically and socially disadvantaged sections of the society and ensure an inclusive economic growth.

⁹ <https://msme.gov.in/sites/default/files/MSMEENGLISHANNUALREPORT2021-22.pdf>

Like the government, various industry associations and chambers of commerce such as Confederation of Indian Industry (CII) and Federation of Indian Chambers of Commerce and Industry (FICCI) may facilitate the adoption of sustainable practices by MSMEs. They may organize training programmes for generating awareness of sustainability among MSMEs, provide them with advisory services as and when required, and help them become members of industry associations and form networks/alliances with their peers for exchanging knowledge and resources. Research (See e.g. Lawrence et al., 2006, Lewis and Cassells, 2010, Lewis et al., 2015, Johnson and Schaltegger, 2016, Ashton et al., 2017, Chen et al., 2017 and Johnson, 2017) has shown that networks and alliances facilitate organizational learning, help access new knowledge and information, overcome barriers and influence the adoption of sustainable practices, and ensure growth and competitiveness of MSMEs. However, the survey by Mitra (2021) has revealed that Indian SMEs have a low-to-moderate level of industry association and alliances. Therefore, different industry bodies and chambers of commerce have an important role to play in encouraging MSMEs to become members of industry associations and helping them form networks/alliances with their peers for sharing knowledge and resources.

Conclusions

This paper presents a review of literature on sustainability in Indian MSMEs. Based on the literature, barriers to and drivers of the implementation of sustainable practices have been highlighted. Survey results on the effect of implementing sustainable practices on firms' performance have also been presented. The paper summarizes the literature review and draws important managerial insights and practical implications for MSME owners/managers, governments/regulatory authorities and industry associations/chambers of commerce to ease and facilitate the implementation of sustainable practices in MSMEs.

The literature review in this paper is focused on Indian MSMEs. A general literature review covering sustainability issues in SMEs/MSMEs in different countries would highlight the country-specific issues, and help us compare SMEs/MSMEs located in different countries in terms of the similarities and differences in the challenges faced by them and the support they receive in implementing sustainable practices. Similarly, the effects of implementing sustainable practices on firms' economic, environmental and social performance may also vary across countries, and a multi-country study would enable us to make a useful comparison of, and gain important insights into, the sustainability issues faced by SMEs/MSMEs, the environmental and social practices adopted by them, and the impact of these practices on their

firms' performance. Interested readers may refer to Bakos et al. (2020), Bartolacci et al. (2020) and Prashar and Sunder (2020).

As mentioned in the paper, the literature on sustainability in Indian MSMEs is limited. More research, both empirical and in-depth qualitative case studies, demonstrating the short- and long-term benefits of sustainability are required to encourage MSMEs to adopt sustainable environmental and social practices (Lee and Klassen, 2008; Williams and Schaefer, 2013; Wu et al., 2015; Chen et al., 2017; Johnson, 2017; Witjes et al., 2017; Caldera et al., 2018). It is expected that future research would address these issues.

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